The following is a marked-up version of the prior pending claims with all changes shown in conventional comparison:

IN THE CLAIMS:

1. (Twice Amended) A thermoplastic polyurethane comprising the reaction product of:

a polyol component including a randomly polymerized polyether polyol having at least 75 percent by weight of propylene oxide repeat units and having a high secondary hydroxyl group content of about 51 to about 100 percent based on the total number of hydroxyl group present in said high secondary polyether polyols, and wherein the number average molecular weight of said polyol component is from about 700 to about 2,500;

a polyisocyanate;

a chain extender; and

a polyurethane catalyst,

and wherein said thermoplastic polyurethane has a molecular weight of from about 75,000 to about 400,000 weight average.

3. (Twice Amended) The thermoplastic polyurethane according to claim 1, wherein said polyol component has a number average molecular weight of from about [600] 800 to about [5,000] 1,500, and wherein said polyol component has a hydroxyl functionality of from about 1.8 to about 2.2.

16. (Twice Amended) A polyurethane composition, comprising:

a polyol component including a randomly polymerized polyether polyol having at least 75 percent by weight of propylene oxide repeat units and having a high secondary hydroxyl group content of about 51 to about 100 percent based on the total number of hydroxyl groups present in said high secondary polyether polyol, and wherein the number average molecular weight of said polyol component is from about 700 to about 2,500;

a polyisocyanate;

a chain extender; and

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a polyurethane catalyst,

said polyurethane being a thermoplastic substantially free of cross-links,

and wherein said thermoplastic polyurethane has a molecular weight of from about 75,000 to about 400,000 weight average.

18. (Twice Amended) The polyurethane composition according to claim 16, wherein said polyol component has a number average molecular weight of from about [600] 800 to about [5,000] 1,500, and wherein said polyol component has hydroxyl functionality of from about 1.8 to about 2.2.

31. (Twice Amended) A process for preparing a thermoplastic polyurethane composition, comprising:

reacting in substantially a single step a composition comprising:

a polyol component including a randomly polymerized polyether polyol having at least 75 percent by weight of propylene oxide repeat units and having a high secondary hydroxyl group content of about 51 to about 100 percent based on the total number of hydroxyl group present in said polyether polyol, and wherein the number average molecular weight of said polyol component is from about 700 to about 2,500;

a polyisocyanate;

a chain extender; and

a polyurethane catalyst,

wherein said thermoplastic polyurethane is substantially linear, and wherein said thermoplastic polyurethane has a molecular weight of from about 75,000 to about 400,000 weight average.

33. (Twice Amended) The process for preparing a thermoplastic polyurethane composition according to claim 31, wherein said polyol component has a number average molecular weight of from about [600] 800 to about [5,000] 1,500, and wherein said polyol component has hydroxyl functionality of from about 1.8 to about 2.2.

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40. (Amended) The process for preparing a thermoplastic polyurethane composition according to claim 39, wherein said polyol component includes less than or equal [to15] to 15 weight percent of said polyol having low secondary hydroxyl content, and wherein said polyurethane catalyst is present in an amount from about 20 to about 500 parts by weight per million parts by weight of the total weight of said polyisocyanate, said polyol component, and said chain extender.

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REMARKS

Claims 1, 3-6, 8-13, 16, 18-21, 23-28, 31, 33-36 and 38-43 were rejected under 35 U.S.C. §102(b) as being anticipated by Barksby et al. (U.S. Patent 5,667,413).

Claim 40 was objected to because of a typographical error.

Claim 40 has been amended to correct the previous typographical error.

The claims have been amended and it is believed the 35 U.S.C. §102(b) rejection should no longer apply as to the amended claims.

The independent claims 1, 16 and 31 have been amended to recite the preferred number average molecular weight of the polyol component (700-2,500). The basis for the number average molecular weight of the polyol can be found on page 6, line 21 to page 7, line 2 of the Specification as filed. Applicant's examples all show a polyol with a molecular weight of 1360.

The reference Barksby et al. teaches making polyurethane elastomers which have improved green strength and short demold times. The elastomers made by Barksby et al. are thermoset polyurethanes. The materials made by Applicant are thermoplastic polyurethanes. A thermoset material is very different from a thermoplastic. Thermoset materials can not be extruded into films as can the thermoplastic materials of Applicant. Thermoset materials must be cast or molded into their final product and allowed time to "set" or cross-link. Thermoplastic materials can be reheated and processed multiple times to change their shape.

The Examiner is correct in that the polyols used by Barksby et al. were made with a double metal cyanide catalyst. The polyols used by Barksby et al. are a much higher molecular weight (4,000-8,000) than the current molecular weight recited in Applicants' amended claims (700-2,500). The high molecular weights used by Barksby et al. is suitable for a thermoset (crosslinked) polyurethane but are not suitable for a thermoset polyurethane as taught by

Applicant. Such high molecular weight could not be satisfactory extruded into thin films as required for Applicant's products.

Barksby et al. also uses triols (see Examples 2 and 3) to achieve crosslinking to make the thermoset materials. When a diol is used, an excess of isocyanate (NCO) is used to obtain crosslinking (see Examples 9-14 of Barksby et al. where the polyol prepolymers contain 6 weight percent NCO).

Applicant's claims also recite a weight average molecular weight for the final thermoplastic polyurethane composition. Barksby et al. does not mention the molecular weight of the final thermoset composition. The molecular weight of a thermoset composition is very, very large (in the millions) because the entire material is crosslinked into one mass. The individual components are covalently bonded together by the crosslinking (either tri functional polyols or excess NCO). Normally, molecular weights are not used to define a thermoset system. The final crosslinked thermoset composition of Barksby et al. would have a molecular weight much greater than that recited in the present claims, regardless of the molecular weight of the starting polyol.

Applicant recognized that mixtures of primary and secondary hydroxyl group containing polyols are not new, but have been previously used in thermoset polyurethanes (see page 3, lines 3-11 of Applicant's specification).

It is submitted that the present amended claims are not anticipated by Barksby et al. and it is requested that the 35 U.S.C. §102(b) rejection be removed.

Although the claims were not rejected as obvious in view of Barksby et al., Applicant would like to present reasons why the present invention would not be obvious from the Barksby et al. reference.

From the teachings of Barksby et al., one skilled in the art of thermoplastic polyurethanes would not be taught how to make an extrudable film having high moisture vapor transmission. Barksby et al. has as one objective to make a polyurethane which absorbs very little water. To achieve high moisture vapor transmission in a monolithic film, as is Applicant's objective, a material is needed which will absorb large amounts of water and transfer the water to the other side of the film.

Also, one desiring to make an extrudable thermoplastic would not study the teachings of a thermoset reference. Thermosets can not be extruded, they are either cast or molded, and even in those processes, they must be molded or cast before the crosslinking occurs. For example, in molding thermosets, the crosslinking occurs in the mold.

It is submitted that a composition as claimed by Applicant would not be obvious from the teachings of Barksby et al.

The Examiner is requested to reconsider the rejection under 35 U.S.C. §102(b) in view of the claim amendments made in this response. A Notice of Allowance is respectfully requested.

Respectfully submitted,

Joe A. Powell

Joe A. Powell
Reg. No. 28,108

Noveon, Inc.
Legal Department
9911 Brecksville Road
Cleveland, Ohio 44141-3247
(216) 447-5716
Date: JAN. 16, 2003
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